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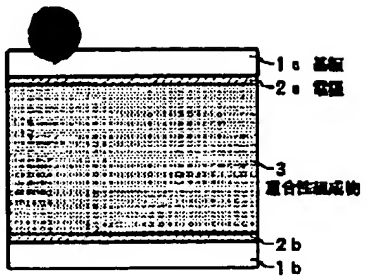
TITLE : HIGH POLYMER DISPERSED LIQUID CRYSTAL ELEMENT AND ITS PRODUCTION

(A)



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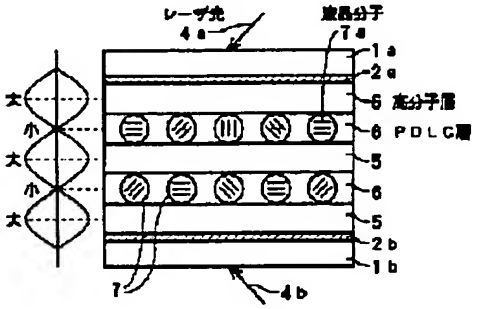

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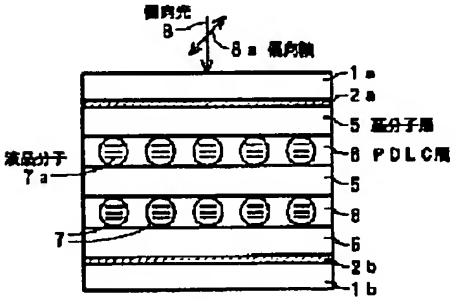

ABSTRACT : PROBLEM TO BE SOLVED: To make it possible to obtain the high reflectivity of a PDLC(polymer dispersed liquid crystal) element having a multilayered sturcure which compares a composite structure of a high-polymer compd. and low-polymer liquid crystals and of which the reflective index changes periodically therein.

SOLUTION: A polymerizable compsn. 3 contg. at least the polymerizable compd. having diazo dyestuff molecular side chains, the low-polymer liquid crystals and a polymn. initiator of a polymerizable group is injected into a cell. This cell is irradiated with laser beams 4a, 4b to cues the interference of the laser beams 4a, 4b in the polymerizable compsn. 3. In the regions where amplitude of laser interference hght is large, the polymerable compass, are polymerized and cured, by which light polymer layers 5 are formed. In the regions where the amplitude of laser interference light is small, a phase sepn. occurs and PDLC layers 6 are formed. The cell is irradiated with the polarized light 8 having the polarization axis 8a of the linearly polarized light with in the plane parallel with the substrate plane. As a result, the diazo dyestuff molecular side chains at the boundary of the liquid region 7 and the high polymer region are curved to the direction perpendicular to the polarization axis 8a of the polarized light 8 and the liquid crystal molecules 7a in the liquid crystal region 7 are aligned.

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